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NON-NATIVE SPECIES NEW TO TEXAS WITH COMMENTS ON OTHER SPECIES

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ABSTRACT

Two non-native plant species are first reported here as growing outside of cultivation in Harris Co., Texas, and are additions to the non-native flora of Texas. *Gilia tricolor* has been introduced as a wildflower along the ditches in parts of the Westchase area of Houston and *Macroptilium lathyroides* has been found growing in landscapes in association with nursery plants originating in Florida. *Ludwigia peruviana* has been found naturalized in the Houston area, only the second county record from Texas. *Manihot grahamii*, previously misidentified as *M. esculenta*, also is a naturalized species in southeast Texas, documented here from Hardin and Harris counties.

Gilia tricolor Benth. (Polemoniaceae) was a very common wildflower species in a ditch near the Westchase area of Houston, apparently growing from seeds sown in late 2009. The site was visited the next two years and seedlings were observed, but it was not visited again to see if the plants were flowering. The species is native to California and also known to be naturalized in Colorado and Massachusetts (BONAP 2012). There are no *Gilia* species known from southeast Texas (Correll & Johnston 1970; Hatch et al. 1990). This species is characterized by its tricolor corolla; yellow with purple spots below the blue-violets lobes (Fig. 1). It is the first member of Polemoniaceae to be added to the list of non-native plants of Texas (Nesom et al. 2010; Aplaca 2010).

Harris Co.: Houston, Westchase area, growing alongside ditch behind the Robinson Library all the way to and past Walnut Bend; Key Map 489Y; with *Lupinus, Bromus, Lolium, Phlox*, all possibly seeded, 19 Apr 2010, *Aplaca 790* (SBSC, SWT).

Macroptilium lathyroides (L.) Urb. (Fabaceae) (wild bushbean) is growing prolifically in a library landscape in West Houston. The plants have been observed freezing back to the ground in the winter of 2010-11 and new plants sprouted in the summer of 2011. These plants were not planted in the landscape; therefore the seeds must have arrived in the soil on the landscaped plants. This species is native to tropical America and is naturalized in Florida, Georgia, Louisiana, and South Carolina (USDA, NRCS 2012). Many of the landscape plants originated in Florida (pers. comm., K. Asakura, Asakura-Robinson Landscaping), where the seeds were probably stowaways in the soil. Landscape maintenance has tried to control this plant by hand removal but it readily reseeds.

Wild bushbean is a twining herbaceous annual up to 1.5 meters (Fig. 2). The flowers are scarlet to purple red with a spirally twisted keel and the legume is linear, straight and mostly 8-12 cm long, ca. 3 mm wide (Fig. 3). The spiraled leaves are pinnate trifoliolate, leaflets ovate or elliptical, 2-4 cm long and 1.5-3.5 cm wide. The individuals in this population showed variety between ovate and elliptical leaflets. The landscape maintenance has tried to control this plant, but it readily reseeds.

Harris Co.: Houston, growing in the landscape of the new Kendall Library/Community Center on Eldridge Pkwy just N of Buffalo Bayou, large plants ascending and twining through other vegetation; Key Map 488G; growing near the bases of various grasses and *Crinum* in the landscape, obviously an introduction from nursery contamination, 6 Aug 2010, *Aplaca 832* (SBSC, SWT).

Figure 1. *Gilia tricolor* in Harris County.

Figure 2. *Macroptilium lathyroides* stem, leaves, and inflorescence.

Figure 3. *Macroptilium lathyroides* flowers and fruit.

Ludwigia peruviana (L.) H. Hara (Onagraceae) (Peruvian primrose-willow) is a woody species that has previously only been recorded from Terrell County in west Texas (Ramamoorthy & Zardini 1987). In 2008 the author found a population thriving in a wetland area of Hermann Park in Houston. There were several shrubs about 2.5 m tall and the plants were observed spreading over the following several years. This is the first record in Texas outside the single collection from Terrell County. The area of Hermann Park is generally left to grow naturally with little maintenance by the park staff. There has been no attempt to control these plants, but concerns about potential invasiveness have been brought up to the Hermann Park Conservancy and the Houston Parks Department.

Harris Co.: Houston, Hermann Park, Growing at water's edge on swampy part of McGovern Lake, 23 Aug 2008, *Aplaca 599* (SWT).

Figure 4. *Ludwigia peruviana* flower and immature capsule.

Figure 5. *Ludwigia peruviana* growth habit of an individual 15 meters from the original population.

Manihot grahamii Hook. (Euphorbiaceae) (Graham's manihot) was collected from sites in Hardin and Harris counties. Many of these vouchers were previously identified as *M. esculenta* Crantz and have been correctly annotated by (pers. comm., Dr. J. Hayden, University of Richmond). The earliest voucher reports this species as cultivated at the Houston Arboretum in Harris County in 1976. It has been reported from Florida, Georgia, and Louisiana (USDA, NRCS 2012; BONAP 2012) but not previously from Texas. The vouchers cited here apparently have been the basis for attributions of *M. esculenta* to the Texas flora.

Manihot grahamii is a South American species that is known to be more cold tolerant than others. The plants become small trees in understory areas and spread regularly from seed and vegetative growth. The area in Harris County has been observed for about a year and a half — the plants are behind the city greenhouse spreading into the forested areas of Memorial Park. The extent of the invasiveness of this species is not known yet, but when the area was cleared of some of the larger individuals, seedlings and root sprouts were actively growing soon afterwards.

Figure 6 – *Manihot grahamii* individual in Memorial Park, Harris County.

Hardin Co.: near Evadale Bridge E of Silsbee and S of highway, ca 50 plants in garbage dump area W side of Neches River; seemingly well established in wild, 24 Aug 1983, *Johnston 12800* (TEX). Harris Co.: Houston Arboretum, cultivated in Houston, 1976, *Vines s.n.* (SBSC); banks of Buffalo Bayou, across from Houston Arboretum, Houston, Apr 1976, *Anderson s.n.* (SBSC); Houston, plant grown from seed obtained in Mexico; fairly large tree in backyard flowerbed, 2.5-3" diameter trunk, 10231 Ivy Ridge, home of Mr. & Mrs. Doug Williams, 18 May 1992, *Tveten L-1498* (SBSC); tall shrub near Cypress Creek in Mercer Arboretum and Botanical Gardens along Aldine Westfield Rd, N of Hwy 1960 and on S side of Cypress Creek, N of Houston,

25 Oct 1997, *Brown 21668* (SBSC); Magnolia Gardens, 24 Oct 2002, *Johnson 1193* (SBSC); Houston, behind HPARD greenhouse at 6502 Memorial Drive, spreading into Memorial Park, 19 Jun 2009, *Aplaca 667* (SBSC).

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